Abstract

A titanium alloy scarcely undergoing brittling caused by hydrogen even in case of being used under hydrogen-absorbing conditions. This alloy comprises a Ti-Al alloy composed of from 0.50 to 3.0% of Al with the balance of Ti together with unavoidable contaminants. A Ti-Al alloy material excellent in hydrogen absorption-resistance wherein an oxidized film of 1.0 to100nm in thickness is formed on a bulk made of a Ti-Al alloy satisfying the chemical composition as described above, and, further, a concentrated Al layer having an Al concentration of 0.8 to 25% higher by 0.3% or more than the bulk is optionally formed between the bulk and the oxidized film.